

## ABSTRACT OF THE DISCLOSURE

### INSTRUMENT AND METHOD TO FACILITATE AND IMPROVE THE TIMING ALIGNMENT OF A PET SCANNER

A system for providing the timing alignment for a scanner. The system ~~comprises~~ includes a removable source and detector assembly which is placed near the centre of the scanner when in use. The source ~~comprises~~ includes a long-lived positron emitting radioactive source. The radioactive source is in close contact with a fast plastic scintillator or other ~~means~~ mechanism of detecting the ionization due to positron decay. A method for reading out the precise time at which the surrounding medium detects the ionization due to positron decay. A ~~means of~~ mechanism for using this time as a reference clock unto which the detectors in the scanner can be aligned.